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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/406,684

09/27/1999

KAZUHIKO TSUDA

1114-134

1852

23117

7590

02/01/2005

NIXON & VANDERHYE, PC
1100 N GLEBE ROAD
8TH FLOOR
ARLINGTON, VA 22201-4714

EXAMINER

SCHECHTER, ANDREW M

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 02/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/406,684

Applicant(s)

TSUDA ET AL.

Examiner

Andrew Schechter

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 June 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 8-14, 17, 19 and 22-107 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8-14, 17, 19 and 22-107 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>22 (5 Jan 2004)</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Interference

1. All claims are allowable over the prior art.
2. U.S. Patent No. 6,410,358 to *Noritake et al.* is brought to the attention of the applicant under 35 U.S.C. 135 for the purposes of an interference. It appears that at least claims 2 and 4 are not patentably distinct from at least claims 23 and 25 of the present application.

For instance, claim 4 of *Noritake* discloses all the features of the present claim 23, except for the photomasks comprising light transmitting portions and light intercepting portions and using uniform exposure, which do not patentably distinguish the claims. Claim 23 of *Tsuda* discloses all the features of *Noritake's* claim 4 except for forming a thin film transistor and having the reflection film by a reflection electrode having a size corresponding to a pixel, which do not patentably distinguish the claims.

Applicant is given ONE MONTH or THIRTY DAYS, whichever is longer, from the mailing date of this communication to comply with the requirements of 37 CFR 41.202(a)(1)-(6). Failure to do so may be considered a concession that the subject matter of this claim is the prior invention of another under 35 U.S.C. 102(g), and thus also prior art under 35 U.S.C. 103(a) (*In re Oguie*, 517 F.2d 1382, 186 USPQ 227 (CCPA 1975)), but will not result in the abandonment of this application. THE PROVISIONS OF 37 CFR 1.136 DO NOT APPLY TO THE TIME SPECIFIED IN THIS ACTION.

Response to Arguments

3. Regarding the Letter of 27 March 2003, that the reasons for allowance of claim 104 is not commensurate: the examiner agrees that this was not correct as written.

Claims 100-101 recite a positive photosensitive resin and a light-blocking layer, while claims 104-105 recite a negative photosensitive resin and a light-transmitting layer. These are art-recognized equivalents of each other.

Therefore the 4th paragraph on p. 3 of the Office Action of 26 February 2003 should have read:

Claims 98-105 recite a method of making an LCD with a reflecting film by applying a positive or negative photosensitive resin, exposing a first region to form asperities, and exposing a second region. Claims 98, 100, 102, and 104 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which are 20-40% of the total area of the mask. Claims 99, 101, 103, and 105 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which have 5-50 μm center-to-center distances. The claims further require a step of heat-treating the developed resin. The prior art does not disclose this, in any of the recited combinations. Considering the prior art of record, specifically: *Ichimura* does not disclose the limitations of 20-40% area or 5-50 μm distances; *Mitsui '635* and *Mitsui '345* disclose using two resins (discussed in Paper No. 7); *Komatsubara* discloses wet etching instead of a photomask and photolithographic exposure; *Japanese Patent Document No. 9-90426* does not disclose a step of heat-

Art Unit: 2871

treating the resin before forming the reflecting film. Claims 98-105 are therefore allowable.

This has been corrected in the reasons for allowance given below.

Allowable Subject Matter

4. Claims 8-14, 17, 19, and 22-107 are allowed.
5. The following is a statement of reasons for the indication of allowable subject matter:

The amendments of 6 December 2002 have overcome the previous rejections of claims 19 and 22 in view of *Ichimura*. The prior art does not disclose a method of forming an LCD with a reflective film using first and second photomasks with light blocking and light transmitting portions for forming asperities in a first region and contact holes in a second region of a photosensitive resin as recited by the amended claims. Claims 19 and 22 are therefore allowable.

The amended limitation of claim 14 is that the exposure amounts of the first and second photomasks are the same. This is not disclosed by the prior art of record. When using a single gray-tone mask there is obviously only one exposure amount; however, the examiner is not aware of any motivation for using the same exposure amount when there are two distinct photomasks. Claim 14 is therefore allowable.

The prior art does not fairly suggest using a single photomask with light-transmitting, light-intercepting, and semi-light-transmitting portions to form asperities

and contact holes, in the process of making a reflective LCD. Claim 11 is therefore allowable.

Independent claims 11, 14, 19, and 22 are therefore allowable, as are their dependent claims 8-10, 12, 13, 17, and 23-25.

Regarding the new claims 26-107 of 21 February 2003, these claims are also allowable over the prior art. Claims 26-28, 39, 50, and 106 recite a method of forming an LCD with a reflection electrode using first and second photomasks with light blocking and light transmitting portions to perform two exposures in first and second regions of a photosensitive resin. Analogously to claims 19 and 22 above, the prior art does not disclose this, so claims 26-28, 39, 50, and 106 are allowable, as are their dependent claims 29-38, 40-49, 51-97, and 107.

Claims 98-105 recite a method of making an LCD with a reflecting film by applying a positive or negative photosensitive resin, exposing a first region to form asperities, and exposing a second region. Claims 98, 100, 102, and 104 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which are 20-40% of the total area of the mask. Claims 99, 101, 103, and 105 recite using a photomask with circular/polygonal portions, light-blocking portions, or light-transmitting portions which have 5-50 μm center-to-center distances. The claims further require a step of heat-treating the developed resin. The prior art does not disclose this, in any of the recited combinations. Considering the prior art of record, specifically: *Ichimura* does not disclose the limitations of 20-40% area or 5-50 μm distances; *Mitsui '635* and *Mitsui '345* disclose using two resins (discussed in Paper No.

Art Unit: 2871

7); *Komatsubara* discloses wet etching instead of a photomask and photolithographic exposure; *Japanese Patent Document No. 9-90426* does not disclose a step of heat-treating the resin before forming the reflecting film. Claims 98-105 are therefore allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Schechter whose telephone number is (571) 272-2302. The examiner can normally be reached on Monday - Friday, 9:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew Schechter
Andrew Schechter
Patent Examiner
Technology Center 2800
27 January 2005